PHASE STEEPENED LOW-FREQUENCY WAVES AT COMETS HALLEY, GIACOBINI-ZINNER, AND GRIGG-SKJELLERUP

B. Tsurutani, K.H. Glassmeier (hot. f. Geophysik, TU Braunschweig, Mendelssohnstr. 3, D-98116 Braunschweig),
F.M. Neubauer (Inst. f. Geophysik, Univ. Cologne, D-50923 Cologne)

Phase steepening of left-hand (Alfvén mode) polarized waves has been detected at comet Grigg-Skjellerup. The steepening property of this mode is considerably different from that for right-hand (magnetosonic) waves. Steepened right-hand G-S and Giacobini-Zinner waves will be Illustrated fur comparison. A scenario for tho phase deepening of both G-S and G-Z left- and right- hand polarized waves will be presented, One consequence of this model is that without the development of further instabilities, the turbulence that will develop will be either purely left- handed or right-handed. This can and will be tested using both cometary wave data sets. An examination of the Halley magnetic field data with our model in mind will provide a clue as to the origin of the turbulence there,